

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

WHAT IS CLAIMED IS:

1. (currently amended) A particle injector for introducing particles into a carrier flow of a microfluidic system, comprising: at least one inlet for receiving the carrier flow, at least one outlet for discharging the carrier flow with the introduced particles, at least one carrier flow channel, connecting the inlet to the outlet, wherein the carrier flow channel has substantially no dead volume and at least one injection channel terminating in the carrier flow channel for introducing the particles into the carrier flow, wherein the injection channel has a feeding-in aid for an injection needle ~~cross-section narrowing to the carrier flow channel~~.

2. (original) The particle injector as claimed in claim 1, wherein the injection channel terminates obtusely in the carrier flow channel.

3. (original) The particle injector as claimed in claim 1, wherein the injection channel terminates substantially right-angled in the carrier flow channel.

4. (original) The particle injector as claimed in claim 1 wherein the inlet and the outlet have a substantially same-size cross-section.

5. (original) The particle injector as claimed in claim 1, wherein the inlet has a centering aid to arrange a line coaxially to the carrier flow channel on the inlet.

6. (original) The particle injector as claimed in claim 5, wherein the centering aid comprises a substantially hollow-cylindrical take-up, which borders the carrier flow channel and is arranged coaxially to the carrier flow channel, whereby the inner diameter of the take-up is larger by the wall thickness of the line than the inner diameter of the carrier flow channel.

7. (currently amended) The particle injector as claimed in claim 1, wherein the particle injector has a top side and a bottom side and said injection channel is arranged on said top side.

8. (canceled)

9. (original) The particle injector as claimed in claim 1, wherein the injection channel has a cross-section, which widens away from the inlet towards the outlet.

10. (currently amended) The particle injector as claimed in claim 1, wherein the inlet of the carrier flow channel is located below ~~on an underside and~~ the outlet of the carrier flow channel ~~is located on a top side~~ such that carrier flow through the particle injector is in a substantially upward direction.

11. (currently amended) The particle injector as claimed in claim 1, wherein the injection channel has a ~~feeding-in aid for an injection needle~~ cross-section narrowing to the carrier flow channel.

12. (currently amended) The particle injector as claimed in claim 1[1], wherein the feeding-in aid has funnel-shaped cross-section widening of the injection channel.

13. (currently amended) The particle injector as claimed in claim 1[1], wherein the feeding-in aid comprises a detachably attached separate component, in which a funnel-shaped feed opening is arranged, said opening terminating in the injection channel in a mounted state.

14. (original) The particle injector as claimed in claim 1, wherein the carrier flow channel has a substantially shoulder-free inner contour.

15. (original) The particle injector as claimed in claim 1, wherein the carrier flow channel has a volume of between 0.02 .mu.l and 1 ml.

16. (original) The particle injector as claimed in claim 1, wherein the particle injector is adapted to be autoclaved.

17. (currently amended) The particle injector as claimed in claim 1, wherein the particle injector at least partially comprises a material selected from the group consisting of polyether ether ketone, ~~LEXAN~~ polycarbonate, ceramic and metal.

18. (original) The particle injector as claimed in claim 1, wherein the particle injector at least partially comprises a heat-conductive material.

19. (original) The particle injector as claimed in claim 18, wherein the particle injector is connected with at least one of a temperature sensor and a tempering element.

20. (original) The particle injector as claimed in claim 1, wherein at least one the inlet and the outlet has a thread for attaching a line.

21. (withdrawn)

22. (withdrawn)

23. (withdrawn)

24. (withdrawn)

25. (withdrawn)

26. (withdrawn)

27. (withdrawn)

28. (original) The particle injector as claimed in claim 1, wherein the outlet has a centering aid to arrange a line coaxially to the carrier flow channel on the outlet.

29. (currently amended) The particle injector as claimed in claim 1, wherein the particle injector is adapted to inject biological cells into the carrier flow of a cell sorter[;].